COGNITIVE VITALITY SUBSTUDY

TABLE OF CONTENTS

1. Background and rationale 1
2. Equipment and supplies 3
3. Safety issues and exclusions 4
4. Participant preparation 4
5. Detailed measurement procedures 4
5.1 Population selection 4
5.1.1 Screener 4
5.2 Test administration 5
5.2.1 Teng Mini-mental State Exam 5
5.2.2 Speed battery 5
5.2.3 Boxes test 5
5.2.4 Digit copying test 6
5.2.5 Buschke Selective Reminding Test (SRT) 7
5.2.6 Activity assessment 8
5.2.7 Cognitive vitality questionnaire 9
5.2.8 Pattern comparison test 12
5.2.9 Letter comparison test 12
5.2.10 Reaction time test 13
5.2.11 CES-D 17
5.2.12 Digit Symbol Substitution Test (DSST) 17
6. Procedures for performing the measurement at home or on the telephone 17
6.1 Cognitive Vitality Substudy in the home 18
6.2 Cognitive Vitality Substudy by telephone 18
7. Alert values/follow-up/reporting to participants 18
8. Quality assurance 19
8.1 Training requirements 19
8.2 Certification requirements/ quality assurance checklist 19
9. References 21
10. Data collection form 23

COGNITIVE VITALITY SUBSTUDY

1. Background and rationale

While existing research suggests that social and behavioral factors, independent of disease processes and aging, contribute to the maintenance of cognitive function in old age, the paucity of longitudinal data; inadequate and/or incomplete assessments of health status, fitness, physical and social activity; and small and/or convenience or highly selective samples limits the generalizability of results and confidence in the findings. Furthermore, personality, which is known to influence behavior and lifestyle choices, and its relationship to maintenance of cognitive function has rarely been examined. No other study, to date, has put all of these factors together.

This study will address two major research questions: (1) What are the relative contributions of cardiovascular fitness, physical activity, personality, and social, recreational and intellectual activity to the maintenance of cognitive function in old age? (2) Do these factors affect different dimensions of cognition?

Longitudinal hypotheses

1. Persons showing a decline in cardiovascular fitness from Year 2 to Year 4 will show declines in cognitive function between Year 3 to Year 7.
2. Independent of cardiovascular fitness and disease status, persons adopting physical, social, recreational and/or intellectual activities will show gains, those maintaining high activity will remain stable, those remaining inactive will show some loss, and those who stopped activity will show the greatest decline in cognitive performance in Year 7.
3. Physical activity and social, recreational and intellectual activity will show differential associations with maintaining and losing neuropsychological function, with physical activity more strongly related to psychomotor speed and social, recreational and intellectual activity more strongly related to central processing speed and measures of memory.

Design

For Year 7, the study population will consist of the subset of Health ABC participants who participated in the Cognitive Vitality Substudy in Year 3. Participation constitutes completion of any of the cognitive tests (e.g., SRT, boxes, digit copying, pattern comparison, letter comparison, or reaction time tests) administered in Year 3 and Year 5 as well as completion of the Teng Mini-mental state exam (see Chapter 2A in Volume IX of the operations manual), and the Digit Symbol Substitution Test (DSST) (see Chapter 2B, Vol. IX of the operations manual).

Measures and instruments

1. Teng Mini-Mental State Exam (Chapter 2A, Vol. IX)	10 minutes
2. Assessment of speed and reaction time with the Salthouse battery: a. Boxes test b. Digit copying test	4 minutes
3. Buschke Selective Reminding Test (SRT) of verbal learning and memory	10 minutes
4. Social, recreational and intellectual activity assessment (Activity assessment)	3 minutes
5. Cognitive vitality questionnaire (social contact; work, volunteer, and caregiving; TV watching/hours reading; anxiety symptoms; and personal mastery/control beliefs)	3 minutes
6. Assessment of speed and reaction time with the Salthouse battery: c. Pattern comparison test d. Letter comparison test e. Reaction time – simple reaction time test, digit digit test, and digit symbol test	8 minutes
7. SRT delayed (20 to 30-minute) recall	2 minutes
8. CES-D	1 minute
9. Digit Symbol Substitution Test (DSST) (Chapter 2B, Vol. IX)	2 minutes
Total estimated time (including MMSE, CES-D, and DSST)	43 minutes

Sensory-motor and perceptual speed and reaction time

There is growing evidence that loss of speed with increasing age is an important contributor to the age-associated decline observed in a wide range of cognitive tasks, including memory. Timothy Salthouse, a leading investigator in this area, has developed a brief battery of reliable tests designed to measure sensory-motor, perceptual and reaction time speed. The Boxes and Digit Copying Tests assess sensory-motor speed and Pattern Comparison and Letter Comparison Tests assess perceptual speed. These four tests use a paper-and-pen format, with a 30 second time limit to complete as many items as possible. The Digit Digit and Digit Symbol are computer-administered choice reaction time tasks. A simple reaction time task is also included.

Buschke Selective Reminding Test (SRT)

Memory is a critical component of cognitive function, and memory impairment is a strong indicator of cognitive decline and subclinical dementia. The SRT is a well-established, highly reliable measure of verbal learning and memory. Normative data for older adults are available. Although several dimensions of learning and memory can be assessed by the SRT, the numerous scores derived are highly intercorrelated. Thus, to streamline scoring, only sum of recall, delayed recall, and sixth trial long term retrieval, which show the best predictive and discriminatory validity for SDAT, will be recorded.

Social, recreational and intellectual activity assessment

Participation in social, recreational, and intellectually stimulating activities will be assessed by a brief questionnaire which was used in Year 5 and was modified from the instrument used in Year 3.

Cognitive vitality questionnaire

Several areas of questioning important to the Cognitive Vitality Substudy that were included in the main study questionnaire in Year 3 have not been included in the Year 7 instrument. Because it is desirable to capture change in these areas, these sets of questions are included as a supplemental battery to be administered after the activity assessment. This battery includes: 1. social contact, 2. work, volunteer, and caregiving, 3. TV watching/ hours of reading per week, 4. anxiety symptoms, and 5. personal mastery/control beliefs.

2. Equipment and supplies

- pens
- laminated cards with SRT words
- timer with bell or chime
- response options cards
- stopwatch
- Year 7 Cognitive Vitality Substudy Workbook
- computer that can run DOS, loaded with test software

3. Safety issues and exclusions

There are no exclusions for these exams. Ask the participant if they have difficulty seeing large print or if they have a health or physical problem that makes it impossible to grasp and use a pen, but even if they have difficulty, administer as many of the tests as possible.

4. Participant preparation

Testing should be performed in a quiet, well-illuminated room with the participant seated.

5. Detailed measurement procedures

5.1 Population selection

The Data from Prior Visits Report for Year 7 will indicate whether or not the participant is part of the Cognitive Vitality Substudy.

5.1.1 Screener

Prior to administering the Cognitive Vitality Substudy tests, all participants will be asked if they have difficulty seeing large print or if they have a health or physical problem that makes it impossible for them to grasp and use a pen. The first page after the Cognitive Vitality Substudy Procedure Checklist is a Screener form that includes the following questions:

1. Script: *"Do you have difficulty seeing large print?"*

2. Script: *"Do you have a health or physical problem that makes it impossible for you to grasp and use a pen?"*

If the participant answers "Yes" to either of these questions, administer as many of the cognitive vitality substudy tests as possible.

5.2 Test administration

The cognitive vitality substudy battery is the only series of tests being administered at the clinic during Year 7 of Health ABC. Since the SRT has a delayed recall component, it needs to be administered before the questionnaires. Since the delayed recall component of the SRT, should be administered 20 to 30 minutes following trial 6, if time is running short, you may need to postpone administration of one or both questionnaires or one or more components of the speed battery until after the delayed recall.

5.2.1 Teng Mini-mental State Exam

The first test to be administered is the Teng Mini-Mental State Exam (see Chapter 2A, Vol. IX for instructions).

5.2.2 Speed battery

The speed battery consists of five brief tests. This year the Boxes and Digit Copying test will be administered before the Buschke test. The Pattern Comparison, Letter Comparison, and Reaction time tests will be administered after the questionnaires. Boxes and Digit Copying assess sensory-motor speed and Pattern Comparison and Letter Comparison assess perceptual speed. These four tests are paper-and-pen, timed tasks. The reaction time test, consisting of simple reaction time and choice reaction time tasks (Digit Digit and Digit Symbol) is computer administered.

5.2.3 Boxes test

Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.

Script: *"Please complete as many boxes as you can, like this."*

Demonstrate, working rapidly. Use the first three boxes.

"Now, you try the rest of the boxes above the line."

After the participant completes the practice boxes, show the participant where to begin the test.

"Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."

Start timing. After 30 seconds, say: *"STOP. Thank you."*

Look over the Boxes Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.

For scoring, count the number of successfully completed boxes below the line (on page 10), and record this number on the Boxes Test data collection form (page 9 of the Cognitive Vitality Substudy Workbook).

If the participant refuses the Boxes Test, mark the bubble entitled "Participant refused Boxes Test."

Go to the next test.

5.2.4 Digit copying test

Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.

Script: *"Please copy the number that appears in the top box in the bottom box, like this."*

Demonstrate, working rapidly. Use the first three boxes.

"Now, you try the rest of the boxes above the line."

If the participant appears to be trying to copy the numbers exactly, or if the participant asks if they need to copy the numbers exactly, tell the participant: *"Copy the numbers as you would normally write them."*

After the participant completes the practice boxes, show the participant where to begin the test.

"Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."

Start timing. After 30 seconds, say: *"STOP. Thank you."*

Look over the Digit Copying Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.

For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet below the line (on page 12), and record this number on the Digit Copying Test data collection form (page 11 of the Cognitive Vitality Substudy Workbook).

If the participant refuses the Digit Copying Test, please mark the bubble entitled "Participant refused Digit Copying Test."

Go to the next test.

5.2.5 Buschke Selective Reminding Test (SRT)

Have the participant sit comfortably at a desk or table.

Script: *"I'm going to read you a list of 12 words. Please listen carefully, because when I stop, I want you to tell me as many of the words as you can remember. They don't have to be in any order. You will get six chances to learn all 12 words. Each time I will tell you the words that you missed, then I want you to repeat as many of the 12 words as you can. Many people remember only about half of the words."*

Show Card #3 with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word (show Card #4). Repeat this procedure for all 12 words, showing one card every 5 seconds (show Cards #5 through #14). After the last word is shown, ask the participant to recall as many words as they can.

Script: *"I want you to tell me as many of the words as you can*."

For each word correctly recalled, place an "X" in the corresponding box under the Trial column. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an "X" in the corresponding box all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). (Note that after the form is scanned, the computer will double-check the accuracy of the scoring. The programming will recognize if a participant gets all 12 words three times consecutively.) If the participant recalls words not on the list, inform the participant, by saying something like *"cat is not one of the words*."

The final learning trial is Trial 6. Count the number of words recalled at least twice in a row that were also recalled in Trial 6. If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (long-term storage).

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: *"Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can remember."*

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.

Scoring instructions:

Record all of the scores described below on the Cognitive Vitality Substudy Buschke Selective Reminding Test (SRT) data collection form in the Cognitive Vitality Substudy Workbook (page 14). Write an "X" in the corresponding box for each word correctly recalled during each trial.

a) Trial 1: Count the number of words recalled in Trial 1 (maximum=12).
b) Total Recall: Count the number of words recalled over the first six trials (maximum=72).
c) Trial 6 LTS: Count the number of words in long-term storage in the final learning trial (Trial 6 LTS). Count the number of words recalled at least twice in a row (consecutively) that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row (consecutively) is trial 6, it still counts as an LTS (maximum=12).
d) Record the time of start of 20 to 30 minute recall period (time when timer is set for 28 minutes).
e) Record the time of end of 20 to 30 minute recall period.
f) 20 to 30-minute Recall: Count the number of words recalled after 20 to 30 minute delay (maximum=12).
g) Record whether or not the complete Buschke Selective Reminding Test was administered.

5.2.6 Activity assessment

Immediately following the sixth trial of the SRT administer the Activity Assessment and record responses on the Activity Assessment data collection form. If the activity is sporadic (e.g., several days in a row, a few times a year) and the participant cannot choose a response, choose at least monthly as the response.

Script: *"For each of the following activities, please tell me how often you did them in the past year:* **[Show Card #15]** *Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less then once a week (4), At least every week (5), Several times a week (6), or Daily (7)." "You can just say the number next to your choice if you want."*

In the past 12 months how often did you . . . ?
1. Do a crossword or other word or jigsaw puzzle.
2. Read a newspaper or magazine article.
3. Read a novel or non-fiction book, such as a biography.

4. Play board games, bingo, bridge or other card games.
5. Use a computer.
6. Write a letter or e-mail, article, poem, or story.
7. Travel 100 miles or more from your home.
8. Do handcrafts, sewing, needlework, carpentry, wood working, model building, art projects, sketching or drawing, photography, or painting.
9. Go out to a movie; attend a concert, the theater, or a sports event; or visit a museum, zoo, aquarium, or science center.
10. Take a class or adult education course.
11. Attend a lecture, discussion, or public meeting.
12. Participate in church, community, or social club activities (in addition to any mentioned above).

5.2.7 Cognitive vitality questionnaire

Administer the cognitive vitality questionnaire next and record responses on the appropriate data collection forms. Areas of questioning consist of the following:

Social contact

Show Card #16.

Script: *"Please tell me, in a typical week, how often do you get together with friends or neighbors?"*

At least once a day, 4 to 6 time per week, 2 to 3 times per week, 1 time per week, or Less than once per week

Script: *"In a typical week, how often do you get together with children or other relatives?"*

At least once a day, 4 to 6 times per week, 2 to 3 times per week, 1 time per week, or Less than once per week

Work, volunteer, caregiving

Script: *"Do you currently work for pay, either at a regular job, consulting, or doing odd jobs?"*

If the answer is "Yes" ask:

Script: a. *"On average, how many hours do you work per week?"*

b. *"How many months of the year do you work?"*

Show Card #17

c. "Which of the following categories best describes the type of activity that you do in your job? Would you say . . .?"

Mainly sitting, Sitting, some standing and/or walking, Mostly standing and/or walking, Mostly walking and lifting and/or carrying; heavy manual work

Script: *"Do you currently do any volunteer work?"*

If the answer is "Yes" ask:

Script: a. *"On average, how many hours do you volunteer per week?"*

b. "How many months of the year do you do this?"

Show Card #17

c. "Which of the following categories best describes the type of activity that you do? Would you say . . .?"

Mainly sitting, Sitting, some standing and/or walking, Mostly standing and/or walking, Mostly walking and lifting and/or carrying; heavy manual work

Script: *"Do you currently provide any regular care or assistance to a child or a disabled or sick adult?"*

If the answer is "Yes" ask:

Script: *"About how many hours per week do you provide care to another person? If you are unsure, please make your best guess."*

TV watching/ hours of reading per week

Show Card #18

Script: *"About how many hours per week do you spend watching television?"*

More than 0, but less than 7 hours/week; At least 7, but less than 14 hours/week; At least 14, but less than 21 hours/week; At least 21, but less than 28 hours/week; At least 28, but less than 35 hours/week; 35 or more hours/week

If they watch TV, ask:

Script: *"Do you usually use a remote control for your TV?*

Script: *"About how many hours per week do you spend reading, including books, newspapers, and magazines?"*

Anxiety symptoms

Script: *"During the past week have you felt nervous or shaky inside?"*

If the answer is "Yes" ask:

> Script: *"How nervous or shaky have you felt? Would you say a little, quite a bit, or extremely nervous and shaky inside?"*

Script: *"During the past week, have you felt tense or keyed up?"*

If the answer is "Yes" ask:

> Script: *"How tense or keyed up have you felt? Would you say a little, quite a bit, or extremely tense or keyed up?"*

Personal mastery/control beliefs

Script: *"Please tell me whether you agree or disagree with this statement: I can do just about anything I really set my mind to. Would you say you agree or disagree?"*

If the participant says that they agree, ask:

> *Script: "Would you say you agree strongly or agree somewhat?"*

If the participant says that they disagree, ask:

> *Script: "Would you say you disagree strongly or disagree somewhat?"*

Script: *"Do you agree or disagree with this statement: I often feel helpless in dealing with the problems of life?"*

If the participant says that they agree, ask:

> *Script: "Would you say you agree strongly or agree somewhat?"*

If the participant says that they disagree, ask:

> *Script: "Would you say you disagree strongly or disagree somewhat?"*

5.2.8 Pattern comparison test

Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.

Script: *"In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns. Try the following examples*."

Rarely, a participant may say that they are having trouble seeing the figures. Offer the participant a magnifying glass. If they continue to have trouble, tell them to skip those they cannot see.

As the participant tries the practice examples, make sure they understand the instructions before continuing. Place the Pattern Comparison Test worksheet face down in front of the participant, then say:

Script: *"You will have 30 seconds to compare as many line patterns as possible. When I say go, turn the sheet over and start. Ready? Go."*

Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: *"STOP. Thank you."*

Look over the Pattern Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. Later, you may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses. Go to the next test.

If the participant refuses the Pattern Comparison Test, mark the bubble entitled: "Participant refused Pattern Comparison Test."

5.2.9 Letter comparison test

Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

Script: *"In this test you will be asked to determine whether two sets of letters are the same or different. If the letters are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair. Try the following example*s."

As the participant tries the practice examples, make sure they understand the instructions before continuing. Place the Letter Comparison Test worksheet face down in front of the participant then say:

Script: *"You will have 30 seconds to compare as many pairs as possible. When I say go, turn the worksheet over and start. Ready? Go.*"

Start timing immediately after the participant turns the test worksheet over. After 30 seconds, say: *"STOP. Thank you."*

Look over the Letter Comparison Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear to the data managers that these answers are not to be counted as completed. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses. Go to the next test.

If the participant refuses the Letter Comparison Test, please mark the bubble entitled "Participant refused Letter Comparison Test."

5.2.10 Reaction time test

Installing the software

The Coordinating Center will supply the software containing the necessary files for the reaction time test. Create a subdirectory called "digtime" on the c: drive of the hard disk of the computer that will be used for the test. (**C:\md digtime)** Copy the contents of the diskette into the subdirectory (**A:\>copy *.* C:\digtime**). These 6 files will be copied to the subdirectory.

Go.bat
Steve.exe
Cga.bgi
Digsym00.sym
Digsym09.sym
Digsymx.exe

Explanation of the files

Digsymx is the software for the digit-digit and digit-symbol test.
Digsym00 and **Digsym09** are resource files for the program.
Go is a program to run the Health ABC battery
Steve displays the results of all seven components for a given participant.

Running the software

The software must be run in DOS mode on the computer. If the computer displays a window screen, select shutdown from the Start menu. Select "**Restart in MS-DOS mode**" from the

display and press the **YES** button at the bottom of the window. At the c:\ prompt change to the **Digtime** subdirectory by typing **"cd\" then "cd\digtime**."

To run the full battery of tests type "GO"

The following tests will be administered in the order listed.

1. Simple Reaction Time Practice Trial and Test
2. Digit Digit practice trial
3. Digit Digit first test trial
4. Digit Digit second test trial
5. Digit Symbol practice trial
6. Digit Symbol first test trial
7. Digit Symbol second test trial

The screen will display the **name of the current test** and **"press any key to continue"**

Press <Enter>
The screen will display: **Enter subject number:**
Type the last 2 digits of participant's Enrollment ID number <ENTER>
The screen will display: **Press <ENTER> to continue, or <SPACE BAR> to correct.**
<ENTER>
The screen will display: **Initializing ....**
Press <ENTER> to start experiment
The Pictures to begin the trial will appear momentarily.

At the end of a trial, the screen will display: **Recording Data . . .** and **End of Experiment**. The program will then cue you to begin the next test in the series with the name of the test and the "**press any key to continue**" message. As you continue you must re-enter the participant's ID for every trial. It is important that the same ID number be entered each time.

After all trials are completed, the results for 7 trials will be listed. The data values for Trials 1, 3, 4, 6 & 7 should be recorded on the data collection form. Trials 2 & 5 are practice trials.

If for some reason the tests cannot be completed press **<CNTRL-C>** (or **<CNTRL-Break>** depending on your computer) when "**Press any key to continue**" appears.

To examine the results of an individual trial enter: **TYPE digsym0[1-7].[ID]** where the number 1-7 is the number of the trial you want to examine and ID is the participant's ID number. For example, if you wished to see the values for the first trial of the digit-symbol test (trial 6 as numbered above) for participant 88 you would enter: **Type digsym06.88**.

Each of the tests can be run individually if necessary, or particular tests can be repeated. The commands to run a particular test are as follows.

For Reaction time test and practice trial type:

DIGSYMX 1 U=09 S=09 R=2
For Digit Digit practice trial type:
DIGSYMX 2 U=09 S=09 R=2
For Digit Digit first test trial type:
DIGSYMX 3 U=09 S=09 R=5
For Digit Digit second test trial type:
DIGSYMX 4 U=09 S=09 R=5
For Digit Symbol practice trial type:
DIGSYMX 5 U=09 S=00 R=2
For Digit Symbol first test trial type:
DIGSYMX 6 U=09 S=00 R=5
For Digit Symbol second test trial type:
DIGSYMX 7 U=09 S=00 R=5

Deleting files

At the end of the study day you will want to delete the examination files. To do this type del ***.[ID]** at the **"**digtime>" prompt. ID is the ID number you used for a participant that day. You would run this command for each participant examined. For example, to delete participant 10, type del *.10 at the digtime> prompt.

Participant instructions:

For testing, briefly describe the reaction time tests to the participant.

Script: *"The next set of tests measure reaction time and are done using a computer screen and keyboard."*

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the **digtime** directory. Type in "GO."

Administer simple reaction time test

Script: *"For the first test, all you need to do is press the "/" key with your right index finger, like this* [**demonstrate**], *whenever you see numbers in this box. Please hit the key as fast as you can. The first test is for practice. Are you ready?"*

If a participant has difficulty understanding the directions, the examiner should demonstrate the procedure in the following way: The examiner points to the number box on the screen that changes with the "/" keystroke and makes the numbers change.

Script: *"In this task you hit the "/" key as fast as you can whenever you see numbers in this box, like this."*

Hit / key several times.

Script: *"Now you try it."*

Make sure the participants understand and, if needed, demonstrate again. Occasionally a participant may press the slash key too hard and cause the slash to automatically be repeated. If this happens, instruct the participant to hit the key correctly (by demonstrating a second time), and begin the reaction time tests again.

Script: *"Ready? Go."*

then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: *"Now, let's do the test for real. Please hit the key as fast as you can. Ready? Go."*

press <ENTER> to start the test. When finished, thank the participant.

Administer digit digit test

Script: *"For this test, a box will appear with two numbers, as shown here.* **[Show Card #17].** *When the numbers in the box are the same, press the "/." If the numbers are different, press the "Z." You will get one short practice then two longer test trials."*

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: *"For example, on this card the numbers are 2 and 7 and these are not the same so you would need to press the 'Z' key for different. Now you try a few examples."*

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: *"Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go,"*

then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Administer digit symbol test

Script: *"For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here.* **[Show Card #20]**. *When the number and symbol in the box match at the top of the screen, press the "/." If the number and symbol do not match, press the "Z." You will get one short practice then two longer tests."*

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: *"For example, on this card the 2 and upside-down V symbol do not match the 2 and upside down T here* [Point]*, therefore you would hit the 'Z' key for different. Now you try a few examples."*

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: *"Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go,"*

then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

When testing is completed, record test results on the Simple Reaction Time, Digit Digit, and Digit Symbol Test data collection forms (pages 27, 28, and 29 of the Cognitive Vitality Substudy Workbook). Because there is no printed backup of the data, it is especially important that the participant results be accurately recorded.

5.2.11 CES-D

Ask the CES-D questions.

Script: *"Now I have some questions about your feelings during the past week. For each of the following statements, please tell me if you felt that way: Rarely or None of the time; Some of the time; Much of the time; Most or All of the time."*

Show Card #21.

5.2.12 Digit Symbol Substitution Test (DSST)

Administer the digit symbol substitution test (see Chapter 2B, Vol. IX).

6. Procedures for performing the measurement at home or on the telephone

If a clinic visit cannot be completed, first try to schedule a home visit. If a home visit is not possible, administer the test over the telephone.

6.1 Cognitive Vitality Substudy in the home

The same Cognitive Vitality Substudy Workbook that is used in the clinic should be used for home visits. All tests should be administered in the home, except for the following:

- Simply Reaction Time Test
- Digit Digit Test
- Digit Symbol Test

The tests mentioned above all require a computer and therefore, cannot be administered in the home. Please note that the Digit Symbol Substitution Test should be administered in the home.

When completing the Procedure Checklist, please mark the "No: other reason" bubble to record why the test was not done. In addition, in the Comments column, please write in Home Visit.

6.2 Cognitive Vitality Substudy by telephone

The same Cognitive Vitality Substudy Workbook that is used in the clinic should be used when the tests are administered by phone. If the Cognitive Vitality Substudy is done over the phone, only the following tests/questions can be administered:

- Selected questions (as indicated by the stars in front of the questions) in the Teng Mini-Mental State Exam (pages #3-#8)
  When completing the Procedure Checklist, next to the Teng Mini-Mental State Exam (item 2), please mark the “Yes, measurement partially completed” bubble. In addition, in the Comments column, please write in Telephone Contact.

- Questions on page #15-#20 as indicated by the stars in front of the questions

For all tests that are not administered over the telephone, when completing the Procedure Checklist, please mark the "No: other reason" bubble to record why the test was not done. In addition, in the Comments column, please write in Telephone Contact.

7. Alert values/follow-up/reporting to participants

None

8. Quality assurance

8.1 Training requirements

The examiner requires no special qualifications or prior experience to perform this assessment. Training should include:

- Reading and studying manual
- Attending Health ABC examiner training session or observing administration by experienced examiner
- Practicing on volunteers

8.2 Certification requirements/ quality assurance checklist

- Completes training requirements
- Conducts exam on four participants while being observed by the QC officer using the QC checklist

Note that the QC checklist for the Teng Mini-mental State Exam and the Digit Symbol Substitution Test are at the back of those operations manual chapters. The Certification Checklist will include all three components of this year's cognitive vitality exam.

All tests:

- ☐ Exam performed in quiet, private area without interruptions
- ☐ Stopwatch used discreetly

Boxes test

- ☐ Recites instructions correctly
- ☐ Demonstrates completion of boxes rapidly and correctly
- ☐ Test stopped after 30 seconds
- ☐ Boxes test correctly scored

Digit copying test

- ☐ Recites instructions correctly
- ☐ Demonstrates digit copying test rapidly and correctly
- ☐ Test stopped after 30 seconds
- ☐ Digit copying test correctly scored

Buschke Selective Reminding Test (SRT)

- ☐ Correct instructions given in clear, slow speaking voice
- ☐ Laminated cards presented every 5 seconds
- ☐ Cards shown in correct order
- ☐ Participant given 60 seconds for each trial
- ☐ Timer set at appropriate time
- ☐ Trials correctly scored

Activity assessment

- ☐ Administers Activity Assessment immediately after SRT
- ☐ Recites instructions correctly
- ☐ Shows response option cards

Main study questionnaire supplement

- ☐ Recites instructions correctly
- ☐ Shows response option cards

Pattern comparison test

- ☐ Recites instructions correctly
- ☐ Determines that participant understands instructions and completes the sample/practice page
- ☐ Test stopped after 30 seconds
- ☐ Answers marked after 30 seconds are crossed out and initialed.

Letter comparison test

- ☐ Recites instructions correctly
- ☐ Determines that participant understands instructions and completes the sample/practice page
- ☐ Test stopped after 30 seconds
- ☐ Answers marked after 30 seconds are crossed out and initialed.

Reaction time tests

- ☐ Recites instructions correctly
- ☐ Determines that participant understands instructions and performs the practice simple reaction time, digit digit, and digit symbol tests
- ☐ Simple reaction time, digit digit, and digit symbol tests correctly scored

9. References

Arbuckle TY, Gold D, Andres D. Cognitive functioning of older people in relation to social and personality variables. J Psychology Aging 1986;1:55-62.

Christensen H, Mackinnon A. The association between mental, social and physical activity and cognitive performance in young and old subjects. Age Ageing 1993;22:175-182.

Earles JL, Salthouse TA. Interrelations of age, health, and speed. J Gerontol Psychol Sci 1995;50B:P33-P41.

Jones KJ, Albert MS, Duffy FH, Hyde MR, Naeser M, Aldwin C. Modeling age, using cognitive, psychosocial and physiological variables: The Boston Normative Aging Study. Experimental Aging Research 1991;17:227-242.

Luszcz MA, Bryan J, Kent P. Predicting episodic memory performance of very old men and women: Contributions from age, depression, activity, cognitive ability, and speed. Psychology Aging 1997;12:340-351.

Masur DM, Fuld PA, Blau AD, Thal LJ, Levin HS, Aronson MK. Distinguishing normal and demented elderly with the Selective Reminding Test. J Clin Experimental Neuropsychol 1989;11:615-630.

Masur DM, Sliwinski M, Lipton RB, Blau AD, Crystal HA. Neuropsychological prediction of dementia and the absence of dementia in healthy elderly persons. Neurology 1994;44:1427-1432.

Mobily KE, Leslie DK, Lemke JH, Wallace RB, Kohout FJ. Leisure patterns and attitudes of the rural elderly. J Applied Gerontol 1986;5:201-214.

Salthouse TA. General and specific speed mediation of adult age differences in memory. J Gerontol Psychol Sci 1996;51B:P30-P42.

Salthouse TA, Coon VE. Interpretation of differential deficits: The case of aging and mental arithmetic. J Experimental Psychology: Learning, Memory, and Cognition 1994;20:1172-1182.

Schaie KW. Midlife influences upon intellectual functioning in old age. International Journal of Behavioral Development 1984;7:463-478.

Schooler C. Psychological effects of complex environments during the life span: A review and theory. Intelligence 1984;8:259-281.

Spreen O, Strauss E. A Compendium of Neuropsychological Tests: Administration, Norms, and Commentary (2nd, ed). 1998; New York: Oxford University Press.

Wiederholt WC, Cahn D, Butters NM, Salmon DP, Kritz-Silverstein D, Barrett-Conor E. Effects of age, gender, education on selected neuropsychological tests in an elderly community cohort. J Am Geriatr Soc 1993;41:639-647.

10. Data collection form

Health ABC

HABC Enrollment ID #	Acrostic	Date Form Completed	Staff ID #
H		Month / Day / 2 0 0 Year	

YEAR 7 COGNITIVE VITALITY SUBSTUDY
PROCEDURE CHECKLIST

Test	Page #'s	Please check if done				Comments
		Yes: measurement fully completed	Yes: measurement partially completed	No: participant refused	No: other reason	
1. Screener for Cognitive Vitality Substudy	2	○	○	○	○	
2. Teng Mini-Mental State Exam	3	○	○	○	○	
3. Boxes Test	9	○	○	○	○	
4. Digit Copying Test	11	○	○	○	○	
5. Buschke Selective Reminding Test (SRT)	13	○	○	○	○	
a. Trial 1	14	○	○	○	○	
b. Total Recall	14	○	○	○	○	
c. Trial 6 LTS	14	○	○	○	○	
d. 20-30 Minute Recall	14	○	○	○	○	
6. Activity Assessment	15	○	○	○	○	
7. Cognitive Vitality Questionnaire	16	○	○	○	○	
8. Pattern Comparison Test	21	○	○	○	○	
9. Letter Comparison Test	24	○	○	○	○	
10. Simple Reaction Time Test	27	○	○	○	○	
11. Digit Digit Test	28	○	○	○	○	
12. Digit Symbol Test	29	○	○	○	○	
13. CES-D	30	○	○	○	○	
14. Digit Symbol Substitution Test	31	○	○	○	○	

Cognitive Vitality Substudy by Telephone

If the Cognitive Vitality Substudy is completed over the telephone, administer the starred "☆" questions:

- Teng Mini-Mental State Exam on pages #3 through #8
- Questions on pages #15 through #20

Page Link #

◆Page 1◆

Y7 CVS Version 1.02
5/29/2003 pjm/hna

12273

Health ABC

HABC Enrollment ID #	Acrostic	Date Form Completed	Staff ID #
H		Month / Day / 2 0 0 Year	

YEAR 7 SCREENER FOR COGNITIVE VITALITY SUBSTUDY

1. Do you have difficulty seeing large print?

○ Yes ○ No ○ Don't know ○ Refused

2. Do you have a health or physical problem that makes it impossible for you to grasp and use a pen?

○ Yes ○ No ○ Don't know ○ Refused

Page Link #

◆Page 2◆

Y7 CVS Version 1.02
5/29/2003 pjm/hna

33812

NOTE: See Volume IX, Chapter 2A for Teng Mini-Mental State Exam protocol.

Health ABC

HABC Enrollment ID #	Acrostic	Date Form Completed	Staff ID #
H		Month / Day / 2 0 0 Year	

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

Are you comfortable? I would like to ask you a few questions that require concentration and memory. Some are a little bit more difficult than others. Some questions will be asked more than once.

(Examiner Note: Record responses. If the participant does not answer, mark the "No response" option.)

★1 When were you born?

a. ___ / b. ___ / c. ___ ○ No response
Month Day Year

Where were you born? (Place of Birth?)

	Answer given	Can't do/ Refused	Not attempted/ disabled
d. City/town	○	○	○
e. State/Country	○	○	○

Examiner Note: Ask again in Question #18.

★2 I am going to say three words for you to remember. Repeat them after I have said all three words:

Shirt, Blue, Honesty

(Examiner Note: Do not repeat the words for the participant until after the first trial. The participant may give the words in any order. If there are errors on the first trial, repeat the items up to six times until they are learned. Record responses to first attempt below.)

	Correct	Error/ Refused	Not attempted/ disabled
a. Shirt	○	○	○
b. Blue	○	○	○
c. Honesty	○	○	○

d. Numbers of presentations necessary for the participant to repeat the sequence: ___ presentations

★3 a. I would like you to count from 1 to 5.

○ Able to count forward ○ Unable to count forward *Say 1-2-3-4-5*

b. Now I would like to you count backwards from 5 to 1. Record the responses in the order given:
(Examiner Note: Enter "99999" if no response)

☐☐☐☐☐

★4 a. Spell "world."

○ Able to spell ○ Unable to spell "It's spelled W-O-R-L-D."

b. Now spell "world" backwards
(Examiner Note: Record letter in order given. Enter "xxxxx" if no response.)

☐☐☐☐☐

Page Link # ___

33812

Y7 CVS Version 1.02 5/29/2003 pjm/hna

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

★5 What three words did I ask you to remember earlier?

(Examiner Note: The words may be repeated in any order. If the participant cannot give the correct answer after a category cue, provide the three choices listed. If the participant still cannot give the correct answer from the three choices, score "Unable to recall/refused" and provide the correct answer.)

a. Shirt

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "Something to wear"
- ○ After "Was it shirt, shoes, or socks?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

b. Blue

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "A color"
- ○ After "Was it blue, black, or brown?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

c. Honesty

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "A good personal quality"
- ○ After "Was it honesty, charity, or modesty?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

★6 a. What is today's date?
(Examiner Note: If the participant does not answer, mark the "No response" option.)

☐☐ / ☐☐ / ☐☐ ○ No response
Month Day Year

b. What is the day of the week?
(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)
- ○ Correct
- ○ Error/refused _____ Day of the week
- ○ Not attempted/disabled

c. What season of the year is it?
(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)
- ○ Correct
- ○ Error/refused _____ Season
- ○ Not attempted/disabled

★7 a. What state are we in?
(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)
- ○ Correct
- ○ Error/refused _____ State
- ○ Not attempted/disabled

b. What county are we in?
(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)
- ○ Correct
- ○ Error/refused _____ County
- ○ Not attempted/disabled

c. What (city/town) are we in?
(Examiner Note: Write answer if incorrect. Enter 'X' if no response.)
- ○ Correct
- ○ Error/refused _____ City/town
- ○ Not attempted/disabled

d. Are we in a clinic, store, or home?
(Examiner Note: If correct answer is not among the three alternatives [e.g., hospital or nursing home], substitute it for the middle alternative [store]. If the participant states that none is correct, ask them to make the best choice of the three options.)
- ○ Correct
- ○ Error/refused
- ○ Not attempted/disabled

Page Link # ☐

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

8 *(Examiner Note: Point to the object or a part of your own body and ask the participant to name it. Score "Error/Refused" if the participant cannot name it within 2 seconds or gives an incorrect name. Do not wait for the participant to mentally search for the name.)*

	Correct	Error/ Refused	Not attempted/ disabled
a. **Pencil:** What is this?	○	○	○
b. **Watch:** What is this?	○	○	○
c. **Forehead:** What do you call this part of the face?	○	○	○
d. **Chin:** And this part?	○	○	○
e. **Shoulder:** And this part of the body?	○	○	○
f. **Elbow:** And this part?	○	○	○
g. **Knuckle:** And this part?	○	○	○

★**9** What animals have four legs?
Tell me as many as you can.

(Examiner Note: Discontinue after 30 seconds. Record the total number of correct responses. If the participant gives no response in 10 seconds and there are still at least 10 seconds remaining, gently remind them [once only]).
"What (other) animals have four legs?"
The first time an incorrect answer is provided, say,
"I want four-legged animals."
Do not correct for subsequent errors.

Score (total correct reponses): ☐☐

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

(Examiner Note: Write any additional correct answers on a separate sheet of paper.)

★**10** *(Examiner Note: If the initial response is scored "Lesser correct answer" or "Error," coach the participant by saying: "An arm and a leg are both limbs or extremities" to reinforce the correct answer. Coach only for Question #10a. No other prompting or coaching is allowed.)*

a. In what way are an arm and a leg alike?
- ○ Limbs, extremities, appendages
- ○ Lesser correct answer (e.g., body parts, both bend, have joints)
- ○ Error/refused (e.g., states differences, gives unrelated answer)
- ○ Not attempted/disabled

b. In what way are laughing and crying alike?
- ○ Expressions of feelings, emotions
- ○ Lesser correct answer (e.g., sounds, expressions, other similar responses)
- ○ Error/refused (e.g., states differences, gives unrelated answer)
- ○ Not attempted/disabled

c. In what way are eating and sleeping alike?
- ○ Necessary bodily functions, essential for life
- ○ Lesser correct answer (e.g., bodily functions, relaxing, good for you or other similar responses)
- ○ Error/refused (e.g. states differences, gives unrelated answer)
- ○ Not attempted/disabled

★**11** Repeat what I say: **"I would like to go out."**
(Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence.)
- ○ Correct
- ○ 1 or 2 words missed
- ○ 3 or more words missed/refused
- ○ Not attempted/disabled

Page Link # ☐

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

12 Now repeat: **"No ifs, ands or buts."**

(Examiner Note: Pronounce the individual words distinctly but with normal tempo of a spoken sentence. Give no credit if the participant misses the "s.")

	Correct	Error/ Refused	Not attempted/ disabled
a. no ifs	○	○	○
b. ands	○	○	○
c. or buts	○	○	○

13 *Examiner Note: Hold up Card #1 and say,*

"Please do this."

If the participant does not close their eyes within 5 seconds, prompt by pointing to the sentence and saying

"Read and do what this says."

If the participant has already read the sentence aloud spontaneously, simply say,

"Do what this says."

Allow 5 seconds for the response. Assign the appropriate score (see below). As soon as the participant closes their eyes, say

"Open."

- ○ Closes eyes without prompting
- ○ Closes eyes after prompting
- ○ Reads aloud, but does not close eyes
- ○ Does not read aloud or close eyes/refused
- ○ Not attempted/disabled

14 Please write the following sentence:
I would like to go out.

(Examiner Note: Hand participant a piece of blank paper and a #2 pencil with eraser. If necessary, repeat the sentence word by word as the participant writes. Allow a maximum of 1 minute after the first reading of the sentence for scoring the task. Either printing or cursive writing is allowed. Score "Correct" for each correct word, but no credit for "I". For each word, score "Error/Refused" if there are spelling errors or incorrect mixed capitalizations [all letters printed in uppercase are permissible]. Self-corrected errors are acceptable.)

	Correct	Error/ Refused	Not attempted/ disabled
a. would	○	○	○
b. like	○	○	○
c. to	○	○	○
d. go	○	○	○
e. out	○	○	○

(Examiner Note: Note which hand the participant uses to write. If this task is not done, ask participant if they are right or left handed. [Use in Question #16])

- ○ Right
- ○ Left
- ○ Unknown

Page Link #

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

15 Here is a drawing. Please copy the drawing onto this piece of paper.

(Examiner Note: Hand participant Card #2. Allow 1 minute for copying. For right-handed participants, present the sample on the left side; for left-handed participants, present the sample on the right side. Allow a maximum of 1 minute for response. Do not penalize for self-corrected errors, tremors, minor gaps, or overshoots.)

a. Pentagon 1

- ○ 5 approximately equal sized
- ○ 5 sides, but longest:shortest side is >2:1
- ○ nonpentagon enclosed figure
- ○ 2 or more lines, but it is not an enclosed figure
- ○ less than 2 lines/refused
- ○ not attempted/disabled

b. Pentagon 2

- ○ 5 approximately equal sized
- ○ 5 sides, but longest:shortest side is >2:1
- ○ nonpentagon enclosed figure
- ○ 2 or more lines, but it is not an enclosed figure
- ○ less than 2 lines/refused
- ○ not attempted/disabled

c. Intersection

- ○ 4-cornered enclosure
- ○ not a 4-cornered enclosure
- ○ no enclosure/refused
- ○ not attempted/disabled

16 ***(Examiner Note: Refer to Question #14 to check whether the participant is right- or left-handed. Ask them to take the paper in their non-dominant hand.)***

"Take this paper with your left (right for left handed person) hand, fold it in half using both hands, and hand it back to me."

(Examiner Note: After saying the whole command, hold the paper within reach of the participant. Do not repeat any part of the command. Do not move the paper toward the participant. The participant may hand back the paper with either hand.)

	Correct	Error/ Refused	Not attempted/ disabled
a. Takes paper in correct hand	○	○	○
b. Folds paper in half	○	○	○
c. Hands paper back	○	○	○

Page Link #

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

YEAR 7 COGNITIVE VITALITY SUBSTUDY
TENG MINI-MENTAL STATE EXAM

17 What three words did I ask you to remember earlier?

(Examiner Note: Administer this item even when the participant scored one or more "unable to recall/refused" on Question #5. The words may be repeated in any order. For each word not readily given, provide the category followed by multiple choices when necessary. Do not wait more than 3 seconds for spontaneous recall and do not wait more than 2 seconds after category cueing before providing the next level of help.)

a. Shirt

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "Something to wear"
- ○ After "Was it shirt, shoes, or socks?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

b. Blue

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "A color"
- ○ After "Was it blue, black, or brown?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

c. Honesty

- ○ Spontaneous recall
- ○ Correct word/incorrect form
- ○ After "A good personal quality"
- ○ After "Was it honesty, charity, or modesty?"
- ○ Unable to recall/refused (provide the correct answer)
- ○ Not attempted/disabled

18 Would you please tell me again where you were born?

(Examiner Note: Ask this question only when a response was given in Question #1d and #1e. Score the response by checking against the response in Question #1d and #1e.)

Place of Birth?	Matches	Does not match/ Refused	Not attempted/ disabled
a. _____ City/town	○	○	○
b. _____ State/Country	○	○	○

19 ***(Examiner Note: If physical/functional disabilities or other problems exist which cause the participant difficulty in completing any of the tasks, record the nature of the problem listed below. Mark <u>all</u> that apply.)***

- ○ Vision
- ○ Hearing
- ○ Writing problems due to injury or illness
- ○ Illiteracy or lack of education
- ○ Language
- ○ Other ***(Please record the specific problem in the space provided.)***

_____

Page Link #

Y7 CVS Version 1.02 5/29/2003 pjm/hna

33812

YEAR 7 COGNITIVE VITALITY SUBSTUDY
BOXES TEST

- Determine if participant wears glasses for reading.
- Script: "Do you usually wear glasses to read?" ○ Yes → Ask the participant to put on their glasses. ○ No
- Give the participant a pen and place the Boxes Test worksheet on the desk or table in front of the participant. Using the first three boxes at the top of the Boxes Test worksheet, demonstrate the task to the participant. Have the participant practice the test with the remaining seven boxes.
- **Script: "Please complete as many boxes as you can, like this."**
- Demonstrate, working rapidly. Use the first three boxes.
- **Script: "Now, you try the rest of the boxes above the line."**
- After the participant completes the practice boxes, show the participant where to begin the test.
- **Script: "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."**
- Start timing.
- After 30 seconds, say: *"STOP. Thank you."*
- Look over the Boxes Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- For scoring, count the number of successfully completed boxes below the line (on page 10) and record this number below.
- If the participant refused the Boxes Test, please mark the bubble below.

Score: ☐☐☐ number completed ○ Participant refused Boxes Test

- Go to the next test.

Page Link # ☐

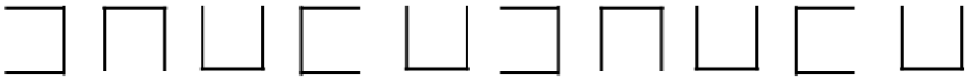
Y7 CVS Version 1.02
5/29/2003 pjm/hna

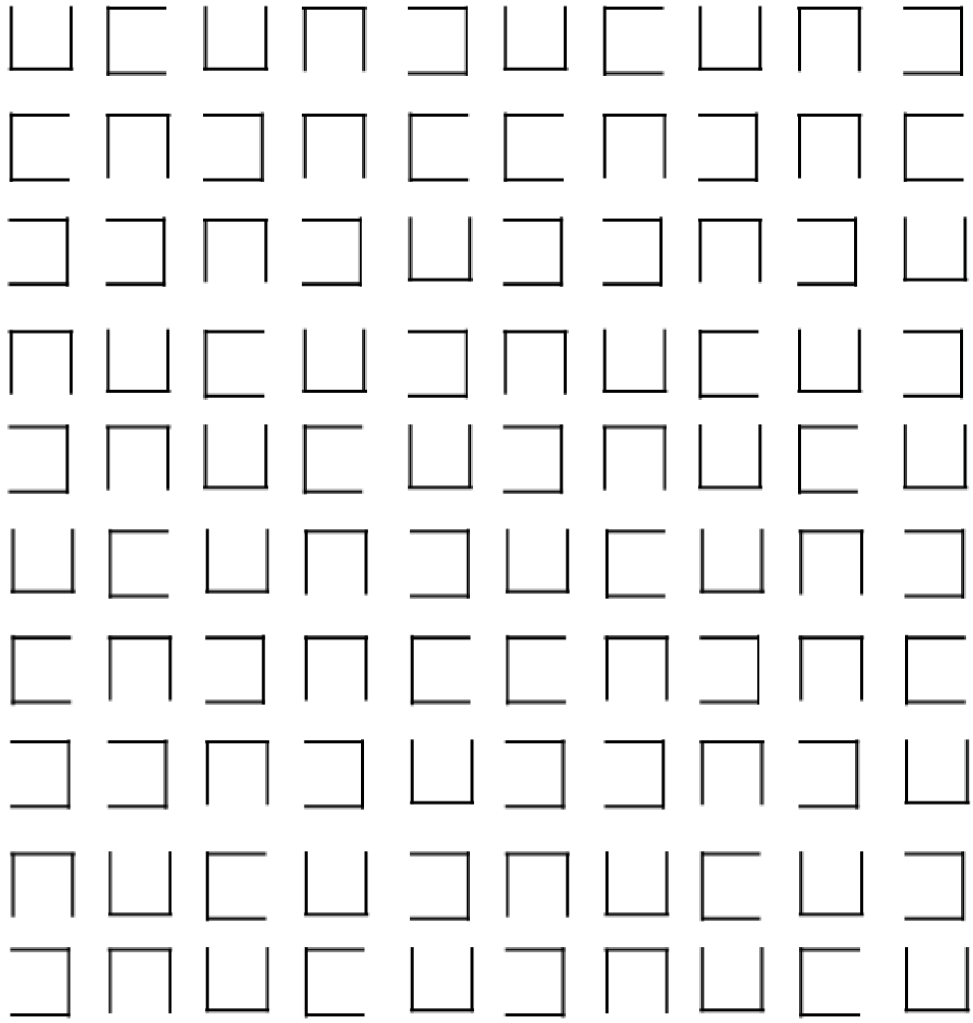
33812

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY
BOXES TEST

Sample:





Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

33812

YEAR 7 COGNITIVE VITALITY SUBSTUDY
DIGIT COPYING TEST

- Give the participant a pen and place the Digit Copying Test worksheet on the desk or table in front of the participant. Using the boxes at the top of the Digit Copying Test worksheet, demonstrate the task to the participant.
- **Script: "Please copy the number that appears in the top box in the bottom box, like this."**
- Demonstrate, working rapidly. Use the first three boxes.
- **Script: "Now, you try the rest of the boxes above the line."**
- If the participant appears to be trying to copy the numbers exactly, or if the participant asks if they need to copy the numbers exactly, tell the participant: **"Copy the numbers as you would normally write them."**
- After the participant completes the practice boxes, show the participant where to begin the test.
- **Script: "Start here. You can work across or down. Please work as rapidly as you can. You will have 30 seconds. Ready? Go."**
- Start timing. After 30 seconds, say: **"STOP. Thank you."**
- Look over the Digit Copying Test worksheet. Any answers that are marked by the participant after you say "Stop" should be crossed out and initialed so that it is clear that these answers are not to be counted as completed.
- For scoring, count the number of digits correctly copied onto the Digit Copying Test worksheet below the line (on page 12) and record this number below.
- If the participant refused the Digit Copy Test, please mark the bubble below.

Score: ☐☐☐ number completed ○ Participant refused Digit Copying Test

- Go to the next test.

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

33812

YEAR 7 COGNITIVE VITALITY SUBSTUDY
DIGIT COPYING TEST

Sample:

6	0	3	2	1	7	9	5	8	4

3	9	1	5	0	2	7	8	6	4
9	2	8	5	3	7	4	0	6	1
8	0	7	5	2	3	6	4	9	1
7	4	5	3	0	2	6	1	9	8
8	7	6	0	5	3	9	2	4	1
6	0	3	2	1	7	9	5	8	4
0	8	3	1	2	9	6	7	4	5
8	6	1	5	0	4	9	7	3	2
6	7	9	4	5	1	0	8	3	2
4	3	5	0	8	2	6	1	9	7

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

33812

YEAR 7 COGNITIVE VITALITY SUBSTUDY
BUSCHKE SELECTIVE REMINDING TEST (SRT)

Purpose:
To measure verbal learning and memory during a multiple-trial list-learning task.

Administration:
Have the participant sit comfortably at a desk or table.

Script: **"I'm going to read you a list of 12 words. Please listen carefully, because when I stop, I want you to tell me as many of the words as you can remember. They don't have to be in any order. You will get 6 chances to learn all 12 words. Each time I will tell you the words that you missed, then I want you to repeat as many of the 12 words as you can. Many people remember only about half of the words."**

Show Card #3 with the first word on the list in front of the participant. Say the word aloud. After 5 seconds, repeat this procedure with the second word **(show Card #4)**. Repeat this procedure for all 12 words, showing one card every 5 seconds **(show Cards #5 through #14)**. After the last word is shown, ask the participant to recall as many words as they can.

Script: **"I want you to tell me as many of the words as you can."**

For each word correctly recalled, place an **"X"** in the corresponding box under the Trial column. After 60 seconds, read the list of words at the rate of one word per 2 seconds skipping over the words that were recalled correctly on the preceding trial. Always present the words in order beginning with the top of the list and working to the bottom. Give the participant 60 seconds for each trial. Mark with an **"X"** in the corresponding box all words correctly recalled for each trial. If the participant is able to recall correctly all 12 words on three consecutive trials, discontinue, but score as if all trials had been given. That is, give the participant a score of 12 for each of the remaining trials, and a score of 12 for the long-term storage (LTS) component (see below). If the participant recalls words not on the list, inform the participant, by saying something like *"cat is not one of the words."*

Immediately following the sixth trial, set the timer for 28 minutes, then administer the Activity Assessment on page 15.

After at least 20 minutes but no more than 30 minutes, ask the participant to recall all 12 words.

Script: **"Remember the list of words I gave you earlier? I want you to tell me as many of the words as you can remember."**

During the 20 to 30-minute delay, the other components of the Cognitive Vitality Substudy should be administered.

YEAR 7 COGNITIVE VITALITY SUBSTUDY
BUSCHKE SELECTIVE REMINDING TEST (SRT)

Examiner Note: Write an **"X"** in the corresponding box for each word correctly recalled during each trial. Please make sure that the **"X"** stays within the box.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	20-30 min
bowl	☐	☐	☐	☐	☐	☐	☐
passion	☐	☐	☐	☐	☐	☐	☐
dawn	☐	☐	☐	☐	☐	☐	☐
judgment	☐	☐	☐	☐	☐	☐	☐
grant	☐	☐	☐	☐	☐	☐	☐
bee	☐	☐	☐	☐	☐	☐	☐
plane	☐	☐	☐	☐	☐	☐	☐
county	☐	☐	☐	☐	☐	☐	☐
choice	☐	☐	☐	☐	☐	☐	☐
seed	☐	☐	☐	☐	☐	☐	☐
wool	☐	☐	☐	☐	☐	☐	☐
meal	☐	☐	☐	☐	☐	☐	☐

a. Trial 1: Count the number of words recalled in Trial 1 (maximum=12).	☐☐ words
b. Total Recall: Count the number of words recalled over the first 6 trials (maximum=72).	☐☐ words
c. Trial 6 LTS (long-term storage): Count the number of words recalled at least twice in a row that were also recalled in Trial 6 (the final learning trial). If the second time a word is recalled twice in a row is Trial 6, it still counts as an LTS (maximum=12).	☐☐ words
d. Record time of <u>start</u> of 20-30 minute recall period (time when timer is set for 28 minutes).	☐☐:☐☐ ○ am ○ pm
e. Record time of <u>end</u> of 20-30 minute recall period.	☐☐:☐☐ ○ am ○ pm
f. 20-30 minute Recall: Count the number of words recalled after 20-30 minute delay (maximum=12).	☐☐ words
g. Was the complete Buschke Selective Reminding Test administered (Trials 1-6 and 20-30 minute recall)?	○ Yes ○ No, participant refused ○ No, other reason

Page Link # ☐

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

Health ABC YEAR 7 COGNITIVE VITALITY SUBSTUDY ACTIVITY ASSESSMENT

Script: "For each of the following activities, please tell me how often you did them in the past year: ***(REQUIRED: Show Card #15)****. Not at all (0), Once or twice only (1), Less than once a month (2), At least monthly (3), Less then once a week (4), At least every week (5), Several times a week (6), or Daily (7). You can just say the number next to your choice if you want."*

(Examiner Note: If the activity is sporadic (e.g., several days in a row, a few times a year) and the participant cannot choose a response, choose at least monthly as the response.)

Activity	Frequency									
In the past 12 months, how often did you...?	Not at all	Once or twice only	Less than once a month	At least monthly	Less than once a week	At least every week	Several times a week	Daily	Don't know	Refused
1. Do a crossword or other word or jigsaw puzzle.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
2. Read a newspaper or magazine article.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
3. Read a novel or non-fiction book, such as a biography.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
4. Play board games, bingo, bridge, or other card games.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
5. Use a computer.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
6. Write a letter, article, poem, or story.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
7. Travel 100 miles or more from your home.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
8. Do handcrafts, sewing, needlework, carpentry, wood working, model building, art projects, sketching or drawing, photography, or painting.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
9. Go out to a movie; attend a concert, the theater, or a sports event; or visit a museum, zoo, aquarium, or science center.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
10. Take a class or adult education course.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
11. Attend a lecture, discussion, or public meeting.	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref
12. Participate in church, community, or social club activities (in addition to any mentioned above).	○ 0	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ Dk	○ Ref

Page Link #

33812

Y7 CVS Version 1.02
5/29/2003 pjm/hna

Health ABC

HABC Enrollment ID # H | Acrostic

YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★1 Please tell me, in a typical week, how often do you get together with friends or neighbors?
(REQUIRED: Show Card #16)

- ○ At least once a day
- ○ 4 to 6 times per week
- ○ 2 to 3 times per week
- ○ 1 time per week
- ○ Less than once per week
- ○ Don't know
- ○ Refused

★2 In a typical week, how often do you get together with children or other relatives?
(REQUIRED: Show Card #16)

- ○ At least once a day
- ○ 4 to 6 times per week
- ○ 2 to 3 times per week
- ○ 1 time per week
- ○ Less than once per week
- ○ Don't know
- ○ Refused

YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

The next set of questions are about any work, volunteer, and caregiving activities that you do.

★❸ Do you currently work for pay, either at a regular job, consulting, or doing odd jobs?

○ Yes ○ No ○ Don't know ○ Refused

Go to Question #4

a. On average, how many hours do you work per week?

☐☐ hours ○ Don't know

b. How many months of the year do you work?

☐☐ months ○ Don't know

c. Which of the following categories best describes the type of activity that you do in your job? Would you say...
(Examiner Note: REQUIRED - Show Card #17.)

- ○ Mainly sitting
- ○ Sitting, some standing and/or walking
- ○ Mostly standing and/or walking
- ○ Mostly walking and lifting and/or carrying; heavy manual work
- ○ Don't know

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★4 Do you currently do any volunteer work?

○ Yes ○ No ○ Don't know ○ Refused

No / Don't know / Refused → Go to Question #5

Yes →

a. On average, how many hours do you volunteer per week?

☐☐ hours ○ Don't know

b. How many months of the year do you do this?

☐☐ months ○ Don't know

c. Which of the following categories best describes the type of activity you do?
(Examiner Note: REQUIRED - Show Card #17.)

- ○ Mainly sitting
- ○ Sitting, some standing and/or walking
- ○ Mostly standing and/or walking
- ○ Mostly walking and lifting and/or carrying; heavy manual work
- ○ Don't know

★5 About how many hours per week do you spend watching television?
(Examiner Note: REQUIRED - Show Card #18.)

- ○ Zero
- ○ More than 0 but less than 7 hours/week
- ○ At least 7, but less than 14 hours/week
- ○ At least 14, but less than 21 hours/week
- ○ At least 21, but less than 28 hours/week
- ○ At least 28, but less than 35 hours/week
- ○ 35 or more hours/week
- ○ Don't know
- ○ Refused

→ Do you usually use a remote control for your TV?

○ Yes ○ No ○ Don't know

★6 About how many hours per week do you spend reading, including books, newspapers, and magazines?

☐☐ hours ○ Don't know ○ Refused

Page Link # ☐

Y7 CVS Version 1.02 5/29/2003 pjm/hna

26377

YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★7 During the past week, have you felt nervous or shaky inside?

○ Yes ○ No ○ Don't know ○ Refused

How nervous or shaky have you felt? Would you say a little, quite a bit, or extremely nervous and shaky inside?

- ○ A little
- ○ Quite a bit
- ○ Extremely
- ○ Don't know

★8 During the past week, have you felt tense or keyed up?

○ Yes ○ No ○ Don't know ○ Refused

How tense or keyed up have you felt? Would you say a little, quite a bit, or extremely tense or keyed up?

- ○ A little
- ○ Quite a bit
- ○ Extremely
- ○ Don't know

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY QUESTIONNAIRE

★ 9 Please tell me whether you agree or disagree with this statement:
I can do just about anything I really set my mind to. Would you say you agree or disagree?

○ Agree ○ Disagree ○ Don't know ○ Refused

Would you say you agree strongly or agree somewhat?	Would you say you disagree strongly or disagree somewhat?
○ Agree strongly	○ Disagree strongly
○ Agree somewhat	○ Disagree somewhat
○ Don't know	○ Don't know

★ 10 Do you agree or disagree with this statement:
I often feel helpless in dealing with the problems of life. Would you say you agree or disagree?

○ Agree ○ Disagree ○ Don't know ○ Refused

Would you say you agree strongly or agree somewhat?	Would you say you disagree strongly or disagree somewhat?
○ Agree strongly	○ Disagree strongly
○ Agree somewhat	○ Disagree somewhat
○ Don't know	○ Don't know

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

YEAR 7 COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON TEST

- Give the participant a pen and place the Pattern Comparison Practice worksheet on the desk or table in front of the participant.

- **Script:** **"In this test you will be asked to determine whether two patterns of lines are the same or different. If the two patterns are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box marked "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair of line patterns. Try the following examples."**

- Make sure the participant understands the instructions before continuing.
  Place the Pattern Comparison Test Sheet face down in front of the participant, then say:

- **Script:** **"You will have 30 seconds to compare as many line patterns as possible. When I say go, turn the sheet over and start. Ready? Go."**

- Start timing immediately after the participant turns the test worksheet over.
  After 30 seconds, say: **"STOP. Thank you."**

- Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.

- Look over the Pattern Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses.
  Go to the next test.

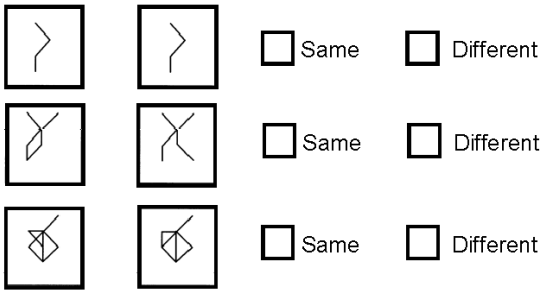
- If the participant refused the Pattern Comparison Test, please mark the bubble below.

○ Participant refused Pattern Comparison Test

Page Link #

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON PRACTICE



Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY
PATTERN COMPARISON TEST

1.			☐ Same ☐ Different	16.			☐ Same ☐ Different
2.			☐ Same ☐ Different	17.			☐ Same ☐ Different
3.			☐ Same ☐ Different	18.			☐ Same ☐ Different
4.			☐ Same ☐ Different	19.			☐ Same ☐ Different
5.			☐ Same ☐ Different	20.			☐ Same ☐ Different
6.			☐ Same ☐ Different	21.			☐ Same ☐ Different
7.			☐ Same ☐ Different	22.			☐ Same ☐ Different
8.			☐ Same ☐ Different	23.			☐ Same ☐ Different
9.			☐ Same ☐ Different	24.			☐ Same ☐ Different
10.			☐ Same ☐ Different	25.			☐ Same ☐ Different
11.			☐ Same ☐ Different	26.			☐ Same ☐ Different
12.			☐ Same ☐ Different	27.			☐ Same ☐ Different
13.			☐ Same ☐ Different	28.			☐ Same ☐ Different
14.			☐ Same ☐ Different	29.			☐ Same ☐ Different
15.			☐ Same ☐ Different	30.			☐ Same ☐ Different

Health ABC YEAR 7 COGNITIVE VITALITY SUBSTUDY
LETTER COMPARISON TEST

- Give the participant a pen and place the Letter Comparison Practice worksheet on the desk or table in front of the participant.

  Script: "In this test you will be asked to determine whether two sets of letters are the same or different. If the letters are the SAME, put an "X" in the box labeled "Same." If they are DIFFERENT, put an "X" in the box labeled "Different." Please try to work as rapidly as you can, choosing "Same" or "Different" for each pair. Try the following examples."

- Make sure the participant understands the instructions before continuing.
  Place the Letter Comparison Test worksheet face down in front of the participant, then say:

  Script: "You will have 30 seconds to compare as many pairs as possible. When I say go, turn the sheet over and start. Ready? Go."

- Start timing immediately after the participant turns the test worksheet over.
  After 30 seconds, say: **"STOP. Thank you."**

- Draw a line through both answer boxes for any answers that are marked by the participant after you say "Stop." Initial the correction so that it is clear to the data managers that these answers are not to be counted as completed.

- Look over the Letter Comparison Test worksheet. You may have to write over incompletely drawn "X's" to enable the scanner to correctly read the participant's responses.
  Go to the next test.

- If the participant refused the Letter Comparison Test, please mark the bubble below.

  ○ Participant refused Letter Comparison Test

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY
LETTER COMPARISON PRACTICE

YCX	YMX	☐ Same ☐ Different
HTRBDP	HTRBDP	☐ Same ☐ Different
LNDPRSKQB	LNDPRSJQB	☐ Same ☐ Different

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC **YEAR 7 COGNITIVE VITALITY SUBSTUDY**
LETTER COMPARISON TEST

1.	HCF	RCF	☐ Same ☐ Different
2.	QTPRJX	QTPNJX	☐ Same ☐ Different
3.	MZDYGVGKQ	MZDYGLGKQ	☐ Same ☐ Different
4.	FQTNMK	JQTNMK	☐ Same ☐ Different
5.	CLJ	CLJ	☐ Same ☐ Different
6.	JGDMNSVPW	JGZMNSVPW	☐ Same ☐ Different
7.	FPTVHKCBJ	FPTVHKCBJ	☐ Same ☐ Different
8.	XRPZBS	ZRPZBH	☐ Same ☐ Different
9.	ZSQ	ZSP	☐ Same ☐ Different
10.	MPZRXL	MPZRXL	☐ Same ☐ Different
11.	KJH	KRH	☐ Same ☐ Different
12.	SMNHVTFCB	SMNHVTFCB	☐ Same ☐ Different
13.	KJWTQF	KJWTQF	☐ Same ☐ Different
14.	CHDKQGLMB	CHDKQGLMB	☐ Same ☐ Different
15.	GHQ	GHQ	☐ Same ☐ Different
16.	GFVMRH	GFVMRH	☐ Same ☐ Different
17.	RSM	RSM	☐ Same ☐ Different
18.	BSRJTRMLG	BSFJTRMLG	☐ Same ☐ Different
19.	NBGFSM	NBGFSM	☐ Same ☐ Different
20.	RNV	FNV	☐ Same ☐ Different

Page Link #

26377

Y7 CVS Version 1.02
5/29/2003 pjm/hna

Health ABC YEAR 7 COGNITIVE VITALITY SUBSTUDY
SIMPLE REACTION TIME TEST

Script: "The next set of tests measure reaction time and are done using a computer screen and keyboard."

Have the participant sit comfortably facing a computer screen and keyboard, then sit down next to and to the right of the participant. Make sure the computer is running in DOS mode and the directory is set to the digtime directory. Type in "GO."

Script: "For the first test, all you need to do is press the "/" key with your right index finger, like this [demonstrate]**, whenever you see numbers in this box. Please hit the key as fast as you can. The first test is for practice. Are you ready?"**

If a participant has difficulty understanding the directions, the examiner should demonstrate the procedure in the following way: The examiner points to the number box on the screen that changes with the "/" keystroke and makes the numbers change.

Script: "In this task you hit the "/" key as fast as you can whenever you see numbers in this box, like this."

Hit "/" key several times.

Script: "Now you try it."

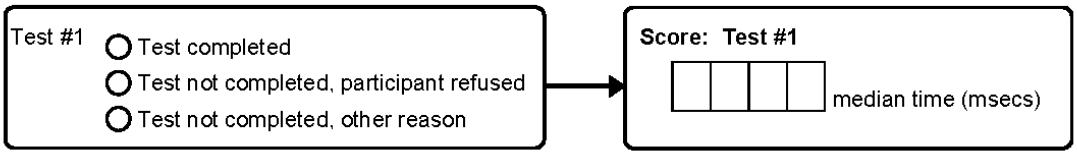
Make sure the participants understand and if needed demonstrate again. Occasionally a participant may press the slash key too hard and cause the slash to automatically be repeated. If this happens, instruct the participant to hit the key correctly (by demonstrating a second time), and begin the reaction time tests again.

Script: "Ready? Go."

Then press <ENTER> to start the test. After one practice trial, repeat the Simple Reaction Time Test.

Script: "Now, let's do the test for real. Please hit the key as fast as you can. Ready? Go."

Press <ENTER> to start the test. When finished, thank the participant.



Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

Health ABC YEAR 7 COGNITIVE VITALITY SUBSTUDY
DIGIT DIGIT TEST

Script: "**For this test, a box will appear with two numbers, as shown here.** [Show Card #19]. **When the numbers in the box are the same, press the "/." If the numbers are different, press the "Z." You will get one short practice then two longer tests."**

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the numbers are 2 and 7 and these are not the same so you would need to press the "Z" key for different. Now you try a few examples."

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Digit - Practice

Test #2
- ○ Practice test completed
- ○ Practice test not completed, participant refused
- ○ Practice test not completed, other reason

Digit Digit - Trial 1

Test #3
- ○ Test completed
- ○ Test not completed, participant refused
- ○ Test not completed, other reason

→ **Score: Test #3**

□□□.□□ percent accuracy

□□□□ median time (msecs)

Digit Digit - Trial 2

Repeat Digit Digit following instructions above.

Test #4
- ○ Test completed
- ○ Test not completed, participant refused
- ○ Test not completed, other reason

→ **Score: Test #4**

□□□.□□ percent accuracy

□□□□ median time (msecs)

Page Link # □

Y7 CVS Version 1.02 5/29/2003 pjm/hna

26377

Health ABC

YEAR 7 COGNITIVE VITALITY SUBSTUDY
DIGIT SYMBOL TEST

Script: "For this test, a box will appear with a number in the top and a symbol in the bottom, as shown here [Show Card #20]**. When the number and symbol in the box match at the top of the screen, press the "/." If the number and symbol do not match, press the "Z." You will get one short practice then two longer tests."**

If a participant has difficulty understanding the directions, the examiner should give an example using the hand card.

Script: "For example, on this card the 2 and upside down V symbol do not match the 2 and upside down T here [Point]**, therefore you would hit the "Z" key for different. Now you try a few examples."**

Before beginning the test, make up to three attempts to confirm understanding.

Set-up screen and instruct participant to place their left index finger over the "Z" and their right finger over the "/."

Script: "Please do the test as quickly and accurately as you can. Do not worry if you press the wrong key; just keep going. Ready? Go."

Then press <ENTER> to start the test. Continue with the test. When finished, thank the participant.

Digit Symbol - Practice

Test #5
- ○ Practice test completed
- ○ Practice test not completed, participant refused
- ○ Practice test not completed, other reason

Digit Symbol - Trial 1

Test #6
- ○ Test completed
- ○ Test not completed, participant refused
- ○ Test not completed, other reason

→ Score: Test #6

□□□.□□ percent accuracy

□□□□ median time (msecs)

Digit Symbol - Trial 2

Repeat Digit Symbol following instructions above.

Test #7
- ○ Test completed
- ○ Test not completed, participant refused
- ○ Test not completed, other reason

→ Score: Test #7

□□□.□□ percent accuracy

□□□□ median time (msecs)

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

YEAR 7 COGNITIVE VITALITY SUBSTUDY
CES-D

Now I have some questions about your feelings during the past week. For each of the following statements, please tell me if you felt that way: Rarely or None of the time; Some of the time; Much of the time; Most or All of the time.
(Interviewer Note: REQUIRED - Show Card #21.)

	Rarely or None of the time (<1 day)	Some of the time (1-2 days)	Much of the time (3-4 days)	Most or All of the time	Don't know	Refused
a. I was bothered by things that usually don't bother me.	O	O	O	O	O	O
b. I had trouble keeping my mind on what I was doing.	O	O	O	O	O	O
c. I was depressed.	O	O	O	O	O	O
d. I felt that everything I did was an effort.	O	O	O	O	O	O
e. I felt hopeful about the future.	O	O	O	O	O	O
f. I felt fearful.	O	O	O	O	O	O
g. My sleep was restless.	O	O	O	O	O	O
h. I was happy.	O	O	O	O	O	O
i. I felt lonely.	O	O	O	O	O	O
j. I could not get going.	O	O	O	O	O	O

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

YEAR 7 COGNITIVE VITALITY SUBSTUDY
DIGIT SYMBOL SUBSTITUTION

1. *Place the task sheet before the participant and point to the task.*

   Script: "Look at these boxes across the top of the page. On the top of each box is a number from one through nine. On the bottom part of each box there is a symbol. Each symbol is paired with a number."

2. *Point to the four rows of boxes.*

   Script: "Down here are boxes with numbers on the top, but the bottom part is blank. What I want you to do is to put the correct symbol in each box like this."

3. *Fill in the first three sample boxes.*

   Script: "Now I want you to fill in all boxes up to this line."

4. *Point to the line separating the samples from the test proper.*

5. ○ Sample completed → Go on to timed test.

   ○ Unable to complete sample → Do NOT go on to timed test. Write in "00" below for Number Completed and "00" for Number Incorrect.

   ○ Refused / ○ Unable to test (arthritis, poor vision, etc.) → Do NOT go on to timed test. Do not score.

   Script: "When I tell you to begin, start here and fill in the boxes in these four rows. Do them in order and don't skip any. Please try to work as quickly as possible. Let's begin."

   Stop the participant after 90 seconds. Say:

   Script: "That's good. That completes this set of tasks."

   Score: ***(Examiner Note: Use Card #22 to score test.***
   DO NOT COUNT ANY SYMBOLS AFTER TWO BLANKS IN A ROW).

   Number Completed: ☐☐ Number Incorrect: ☐☐

Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377

NOTE: See Volume IX, Chapter 2B for digit symbol substitution protocol.

DIGIT	1	2	3	4	5	6	7	8	9
SYMBOL	—	⊥	⊐	L	U	O	Λ	X	=

SCORE

SAMPLES

	2	1	3	7	2	4	8	1	5	4
										2
										1
										3
										2
										1
										4
										2
										3
										5
										2
										3
										1
										4
										6
										3

	1	5	4	2	7	6	3	5	7	2
										8
										5
										4
										6
										3
										7
										2
										8
										1
										9
										5
										8
										4
										7
										3

	6	2	5	1	9	2	8	3	7	4
										6
										5
										9
										4
										8
										3
										7
										2
										6
										1
										5
										4
										6
										3
										7

	9	2	8	1	7	9	4	6	8	5
										9
										7
										1
										8
										5
										2
										9
										4
										8
										6
										3
										7
										9
										8
										6

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Page Link #

Y7 CVS Version 1.02
5/29/2003 pjm/hna

26377